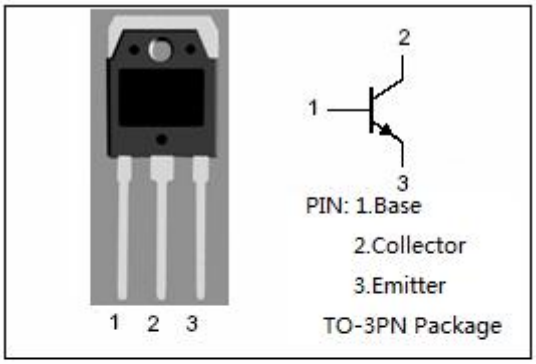
isc Silicon NPN Power Transistors — MJW18020

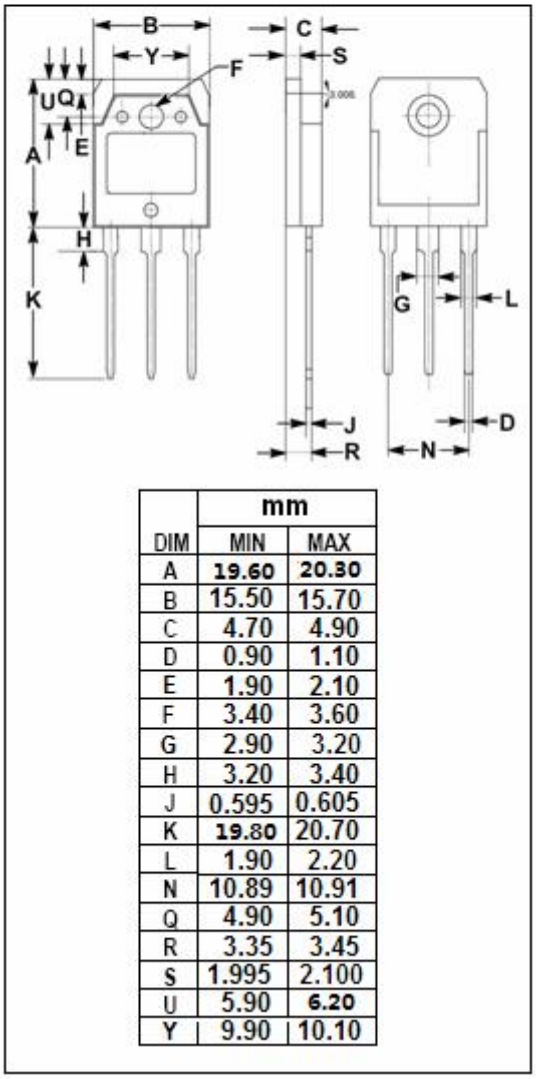
DESCRIPTION

- High Voltage Capability
  Fast and Very Tight Switching Times Parameters tsi and tfi
  High Reliability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

Designed for motor control applications, high power supplies and UPS's for which the high reproducibility of DC and Switching parameters minimizes the dead time in bridge configurations



DIM	mm MIN	mm MAX
A	19.60	20.30
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.20
H	3.20	3.40
J	0.595	0.605
K	19.80	20.70
L	1.90	2.20
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.100
U	5.90	6.20
Y	9.90	10.10

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	1000	V
V_{CEO}	Collector-Emitter Voltage	480	V
V_{EBO}	Emitter-Base Voltage	9.0	V
I_C	Collector Current-Continuous	30	A
I_{CM}	Collector Current-Peak	45	A
I_B	Base Current-Continuous	6.0	A
P_C	Collector Power Dissipation@T_C=25℃	250	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	0.5	℃/W

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C=50mA ; I_B=0	480		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 10A; I_B= 2.0A		0.6	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 20A; I_B= 4.0A		1.5	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	I_C= 10A; I_B= 2.0A		1.25	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	I_C= 20A; I_B= 4.0A		1.5	V
I_{CEO}	Collector Cutoff Current	V_{CE}= 480V ; I_B=0		0.1	mA
I_{CBO}	Collector Cutoff Current	V_{CB}= 1000V ; I_E=0		0.1	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 9.0V; I_C=0		0.05	mA
h_{FE-1}	DC Current Gain	I_C= 3A ; V_{CE}= 5V	15	34	
h_{FE-2}	DC Current Gain	I_C= 10A ; V_{CE}= 2V	8.0		
h_{FE-3}	DC Current Gain	I_C= 20A ; V_{CE}= 2V	5.5		
h_{FE-4}	DC Current Gain	I_C= 10mA ; V_{CE}= 5V	14		
f_T	Current Gain-Bandwidth Product	I_C= 1.0A ; V_{CE}= 10V; f_{test}=1.0MHz	8		MHz
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V; f_{test}=0.1MHz	500		pF
Switching times					
t_d	Delay Time	I_C= 16A , V_{CC}= 125V,I_{B1}= -I_{B2}= 3.2A,		0.2	μs
t_r	Rise Time			0.8	μs
t_s	Storage Time			2.5	μs
t_f	Fall Time			0.5	μs

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